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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,164	12/18/2001	Minoru Okada	01-240	9265

23400 7590 03/03/2006

POSZ LAW GROUP, PLC
12040 SOUTH LAKES DRIVE
SUITE 101
RESTON, VA 20191

EXAMINER	
WILLIAMS, LAWRENCE B	
ART UNIT	**PAPER NUMBER**
2638	

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/020,164	OKADA ET AL.	
	Examiner	Art Unit	
	Lawrence B. Williams	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The specification contains multiple groups of words with no spacings such as "thevehiclecanobtain" in line 14 of page 2.

Appropriate correction is required.

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 8 is objected to because of the following informalities: Examiner suggest applicant define the acronym RSU in line 3 of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention. The independent claims 1, 11, and 19 all cite the limitation "predetermined format" and "without translating the predetermined format". It is known in the art that there will be some sort of translation at the physical layer of the data in preparation for wireless communication. The specification does not disclose any specifics of this "predetermined format" and therefore does not enable one skilled in the art to make and/or use the invention.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The independent claims 1, 11, and 19 all cite the limitation "predetermined format" and "without translating the predetermined format". It is known in the art that there will be some sort of translation at the physical layer of the data in preparation for wireless communication. The specification does not disclose any specifics of this "predetermined format" and therefore renders the claims indefinite.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 2, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi et al. (US Patent 6,754,183 B1) in view of Eastmond et al. (US Patent 5,822,307).

(1) With regard to claim 1, Razavi et al. discloses in Fig. 2, a communication system comprising: a wire communication network, said wire communication network including at least wire link; and one device connected thereto and a terminal connected to said wire communication network for radio communication (26, 28), wherein a baseband signal in a predetermined format is transmitted over said wire link within said wire communication network (col. 3, lines 44-61). Though Razavi et al. is silent as to the signal format, he does disclose ethernet and token ring as network types and various transmission mediums in the lines cited. The use of a baseband signal in a predetermined format in either ethernet and/or token ring would be inherent to one skilled in the art.

Razavi et al. does not disclose wherein, when said terminal receives the baseband signal from said device via said wire terminal modulates a carrier wave signal into a transmission communication network, said using the received baseband signal without translating the predetermined format of the baseband signal into another format, and wherein the transmission signal is transmitted from said terminal via radio waves.

However, Eastmond et al. discloses in Fig. 9, a method, receiver, and system for providing wireless communication compatible with 10BASE-T Ethernet wherein he teaches a terminal performing the radio transmission of a signal of a predetermined format (10BASE –T Ethernet) without translating the format of the baseband signal (Ethernet) into another format

(col. 6, lines 55-57). Modulating a baseband signal (ethernet) on a carrier for RF transmission would be inherent.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Eastmond et al. with the invention of Razavi et al. as a method of providing equivalency between the wire and wireless networks (col. 2, lines 52-62).

(2) With regard to claim 2, Razavi et al. also disclose wherein said wire link is an optical fiber link (col. 3, lines 55-56).

(3) With regard to claim 5, Eastmond teaches a predetermined format of 10BASE-T Ethernet. It is well known in the art that Ethernet comprises a digital baseband signal.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Eastmond et al. with the invention of Razavi et al. as a method of providing equivalency between the wire and wireless networks (col. 2, lines 52-62).

(4) With regard to claim 6, Razavi et al. also discloses the use of a router in the communication system (col. 6, lines 39-41).

(5) With regard to claim 7, Razavi et al. also discloses wherein said wire communication is an in-vehicle LAN established in a vehicle (col. 2, lines 11-19).

10. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi et al. (US Patent 6,754,183 B1) in combination with Eastmond et al. (US Patent 5,822,307) as applied to claim 7 above and further in view of Ricci (US Patent 6,157,321).

(1) With regard to claim 8, as noted above, Razavi et al. in combination with Eastmond et

al. disclose all limitations of claim 7, above. They do not however disclose wherein the transmission signal is transmitted from a terminal to a RSU installed in a vicinity of a road via radio waves.

However, Ricci disclose in Fig. 1, wherein transmission signal is transmitted from a terminal to a RSU (20) installed in a vicinity of a road via radio waves (col. 3, lines 43-50).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Ricci with the combined teachings of Razavi et al. and Eastmond et al. as a method of providing a vehicular data acquisition system providing, navigational and traffic control information (col. 2, lines 3-6).

(2) With regard to claim 9, Ricci also discloses wherein the transmission signal is transmitted from the terminal to a device in another vehicle via radio waves (col. 11, line 64-col. 12, line 12).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Ricci with the combined teachings of Razavi et al. and Eastmond et al. as a method of providing intervehicular communication (col. 2, lines 13-15).

(3) With regard to claim 10, Ricci also discloses wherein a transmission signal is transmitted to a radio device within the vehicle via radio waves (col. 4, lines 37-44).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Ricci with the combined teachings of Razavi et al. and Eastmond et al. as a method of providing intervehicular communication (col. 2, lines 13-15).

11. Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi et al. (US Patent 6,754,183 B1) in combination with Eastmond et al. (US Patent 5,822,307) as applied to claim 1 above, and further in view of Sorrells et al. (US Patent 6,353,735 B1).

(1) With regard to claim 3, claim 3 inherits all limitations of claim 1 above. As noted above, Razavi et al. in combination with Eastmond et al. disclose all limitations of claim 1 above. They do not however teach wherein the terminal modulates the carrier wave so that a frequency of the transmission signal level varies depending on the of the received baseband signal.

However, Sorrells et al. teaches an MDG method for output signal generation wherein he teaches a terminal modulating a carrier wave so that a frequency of a transmission signal level varies depending on the of the received baseband signal (col. 18, lines 8-25).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Sorrells et al. with the combined invention of Razavi et al. and Eastmond et al. as a method of insuring proper reception of the transmitted signal.

(2) With regard to claim 4, claim 4 inherits all limitations of claim 1 above. As noted above, Razavi et al. in combination with Eastmond et al. disclose all limitations of claim 1 above. They do not however teach wherein the terminal modulates the carrier wave so that an amplitude of the transmission signal level varies depending on the of the received baseband signal.

However, Sorrells et al. teaches an MDG method for output signal generation wherein he teaches a terminal modulating a carrier wave so that an amplitude of a transmission signal level varies depending on the of the received baseband signal (col. 21, line 49-col. 22, line 9).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Sorrells et al. with the combined invention of Razavi et al. and Eastmond et al. as a method of insuring proper reception of the transmitted signal.

12. Claims 11, 12, 19-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Eastmond et al. (US Patent 5,822,307).

(1) With regard to claim 11, Eastmond et al. discloses in Fig. 9, a terminal (906) connected to a wire communication network for radio communication, wherein said terminal includes at least one of transmitter means and receiver means, wherein said transmitter means receives a first baseband signal in a predetermined format (col. 4, lines 34-36; lines 54-56) from said wire communication network, and modulates a carrier wave using the received first baseband signal into a transmission signal (modulation with a carrier would be inherent for RF receiving and transmission) without translating the predetermined format of the first baseband signal into another format (col. 6, lines 55-57), wherein the transmission signal is transmitted via a transmitting antenna, wherein said receiver means receives a signal via a receiving antenna (though not shown, an antenna would be inherent for RF receiving and transmission), and demodulates (demodulation would be inherent, though not disclosed) the received signal into a second baseband signal (915), and wherein the second baseband signal (917) is transmitted from said receiver means to said wire communication network without translating a format of the second baseband signal into another format (col. 6, lines 30-57).

(2) With regard to claim 12, Eastmond et al. also discloses wherein said wire communication network includes an optical fiber link for transmitting a signal within said wire

communication network, wherein the first baseband signal received by said transmitter is an optical signal, and wherein the second baseband signal transmitted from said receiver means is an optical signal (col. 4, lines 34-38).

(3) With regard to claim 19, Eastmond et al. discloses in Fig. 9, a method for transmitting a signal in a predetermined format (col. 4, lines 34-36; lines 54-56) from a wire communication network to a radio device via radio waves, comprising the steps of: modulating a carrier wave of a radio frequency using the signal into a transmission signal (modulating the signal with a carrier would be inherent for RF reception and transmission) without translating the predetermined format of the signal into another format; and transmitting the transmission signal to said radio device (col. 6, lines 30-57).

(4) With regard to claim 20, Eastmond et al. also discloses in Fig. 9, wherein the radio device (904) is a terminal connected to another wire communication network (Ethernet) for communication.

(5) With regard to claim 21, Edmond et al. also discloses wherein the radio device (904) is a base station (transmission and reception station in a fixed location) of a wireless communication network.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi et al. (US Patent 6,754,183 B1) in combination with Eastmond et al. (US Patent 5,822,307) as applied to claim 12 above, and further in view of Sorrells et al. (US Patent 6,353,735 B1).

(1) With regard to claim 13, claim 13 inherits all limitations of claim 12, above. As noted

above, Razavi et al. in combination with Eastmond et al. disclose all limitations of claim 12 above. They do not however teach wherein the transmitter means includes a light controlled oscillator for generating the carrier wave of a predetermined nominal frequency, wherein the first baseband signal received by said transmitter means is applied to said light controlled oscillator, and wherein said light controlled oscillator generates, as the transmission signal, a signal of a frequency shifted from the predetermined nominal frequency according to an intensity of the applied first baseband signal.

However, Sorrels et al. discloses in Fig. 12, a VCO for generating a carrier wave of a predetermined nominal frequency, wherein the first baseband signal received by said transmitter means is applied to said voltage controlled oscillator, and wherein said voltage controlled oscillator generates, as the transmission signal, a signal of a frequency shifted from the predetermined nominal frequency according to an intensity of the applied first baseband signal (col. 18, lines 8-25). Though Sorrels et al. does not disclose the light controlled oscillator, he does teach that the disclosed invention adaptable for fiber optic implementation which would inherent include the light controlled oscillator in lieu of the voltage controlled oscillator (col. 66, lines 53-64).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Sorrells et al. with the combined invention of Razavi et al. and Eastmond et al. as a method of insuring proper reception of the transmitted signal.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi et al. (US Patent 6,754,183 B1) in combination with Eastmond et al. (US Patent 5,822,307) as applied to claim 12 above, and further in view of Iwano (US Patent 6,078,414).

As noted above, Razavi et al. in combination with Eastmond et al. disclose all limitations of claim 12 above. They do not however disclose wherein the transmitter means includes an oscillator for generating the carrier wave of a constant frequency and a variable amplifier, wherein the first baseband signal received by said transmitter means is applied to said variable amplifier, and wherein said variable amplifier amplifies the carrier wave generated by said oscillator with a gain variable with an intensity of the applied first basedband signal and outputs a resultant signal as the transmission signal.

However, Iwano discloses in Fig. 5, an optical transmitter system wherein he discloses transmitter means ($TX_1 - TX_N$) including an oscillator (204) for generating the carrier wave of a constant frequency and a variable amplifier, wherein the first baseband signal received by said transmitter means is applied to said variable amplifier (205), and wherein said variable amplifier amplifies the carrier wave generated by said oscillator with a gain variable with an intensity of the applied first basedband signal and outputs a resultant signal as the transmission signal (col. 3, line 44-col. 4, line 8).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Iwano with the combined teachings of Razavi et al. and Eastmond et al. as a method of improving the transmission performance of an optical fiber communication system (col. 2, lines 6-20).

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi et al. (US Patent 6,754,183 B1) in combination with Eastmond et al. (US Patent 5,822,307) as applied to claim 12 above, and further in view of Takagi (US Patent 5,159,479).

As noted above, Razavi et al. in combination with Eastmond et al. disclose all limitations of claim 12, above. They do not however discloses wherein the receiver means includes a demodulator for demodulating the received signal into an electrical baseband signal and an electrical/optical converter, and wherein said electrical/optical converter receives the electrical baseband signal and generates, as a second baseband signal, an optical signal of an intensity variable with an voltage of the received electrical baseband signal.

However, Takagi teaches a private branch radio communication system using optical fibers wherein he discloses receiver means includes a demodulator for demodulating the received signal into an electrical baseband signal and an electrical/optical converter, and wherein said electrical/optical converter receives the electrical baseband signal and generates, as a second baseband signal, an optical signal of an intensity variable with an voltage of the received electrical baseband signal (col. 5, lines 29-35; 45-51). The generation of an optical signal of an intensity (amount or degree of strength) variable with a voltage of the received electrical baseband signal would be inherent since the E/O acts only to convert. Thus the intensity of the signal converted through the E/O would vary dependent upon the input electrical signal.

16. Claims 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eastmond et al. (US Patent 5,822,307) as applied to claim 11 above, and further in view of Razavi et al. (US Patent 6,754,183 B1)

(1) With regard to claim 17, as noted above, Eastmond et al. discloses all limitations of claim 11 above. Eastmond et al. does not however disclose wherein the wire communication network to which the terminal is connected is an in-vehicle LAN established in a vehicle.

However, Razavi et al. discloses in Fig(s) 3, 4, a wire network connected to an in-vehicle LAN.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Eastmond et al. with the teachings of Razavi et al. as a method of improving communication of information between the vehicle and outside networks.

(2) With regard to claim 18, though Razavi et al. is silent as to the arrangement of the transmitting and receiving antennas, the requirement of receiving and transmitting antennas are well–known in the art. Hence, such an arrangement as disclosed by applicant would be merely be a design choice and would not constitute patentability.

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eastmond et al. (US Patent 5,822,307) as applied to claim 19 above, and further in view of Sasai et al. (US Patent 6,459,519).

As noted above, Eastmond et al. discloses all limitations of claim 19 above. Eastmond et al. does not however disclose wherein the communication network includes an optical fiber link for transmitting a signal within said wire communication network, and wherein the signal in a predetermined format is an optical signal, and the optical signal is used for the modulation of the carrier wave without being converted into an electrical signal at said modulating step.

However, Sasai discloses an optical transmitter-receiver wherein a signal in a predetermined format is an optical signal, and the optical signal is used for the modulation of the carrier wave without being converted into an electrical signal at said modulating step (abstract).

It would have been obvious to include the teachings of Sasai et al. with the teachings of Eastmond et al. as a method of optically transmitting a high frequency electrical signal (col. 4, lines 28-32).

Allowable Subject Matter

18. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Soh et al. discloses in US Patent 6,539,028 B1 CSMA/CD Wireless Lan.

b.) Logan, Jr. discloses in US Patent 5,710,651 Remote Millimeter-Wave Antenna Fiber Optic Communication System Using Dual Optical Signal With Millimeter-Wave Beat Frequency.

c.) Tokura et al. discloses in US Patent 4,739,183 Local Area Network For Vehicle.

d.) Rast discloses in US 2002/0105423 A1 Reaction Advantage Anti-Collision System And Methods.

e.) Rollins discloses in US Patent 6,452,714 B1 Enhanced Feed Forward Optical Frequency/Phase Demodulator.

f.) Breed et al. discloses in US Patent 6,405,132 Accident Avoidance System.

g.) O'Neill discloses in US Patent 5,375,007 Optical Distribution System.

h.) Chung et al. discloses in US Patent 6,895,185 B1 Multi-Purpose Optical Fiber Access Network.

i.) Nelson discloses in US Patent 5,339,187 Wide Dynamic Range High Frequency Signal Transmission Utilizing A Logarithmic Amplifier.

j.) Lee discloses in US 2004/0258414 A1 Apparatus And Method For Repeating Signal By Using Wireless Optical Transmission.

k.) Naito et al. discloses in US Patent 5,253,097 Demodulator And Polarization Diversity Receiver For Coherent Optical Communication Provided With The Demodulator.

l.) Imai et al. discloses in US Patent 5,973,812 Optical Transmission And Optical Communication System.

m.) Anzai et al. discloses in US Patent 5,982,762 Wireless Lan System, Base Station Device And Wireless Terminal Device Therefor, And Method For Delaying Information Frame.

n.) Bishop et al discloses in US Patent 6,377,782 B1 Method And Apparatus For Communicating Between A Client Device And A Linear BroadBand Network.

o.) Treadaway et al. discloses in US Patent 6,665,285 B1 Ethernet Switch In A Terminal For A Wireless Metropolitan Area Network.

p.) Yamagishi discloses in US Patent 5,838,926 Data Processing Apparatus And Method In A Network System For Connecting A Plurality Of Terminals.

q.) Kellenberger et al. discloses in US Patent 5,526,376 Intelligent Repeater Interface.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
February 22, 2006

EMMANUEL BAYARD
PRIMARY EXAMINER